



**Energy Statement for Proposed
New Dwelling
at**

**8 Williams Way
Radlett
WD7 7EZ**

Prepared by

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Introduction

This energy statement has been prepared for the proposed development at 8 Williams Way, Radlett, WD7 7EZ.

The statement is intended to satisfy the requirements of Hertsmere Borough Council Interim Planning Policy Position Statement adopted in November 2020.

Policy CS17: Energy and CO2 Reductions

“Rather than the Code for Sustainable Homes which has been withdrawn, applicants should work towards the relevant Building Regulations standard.

Applicants are requested to positively consider how they might strive for net-zero carbon emissions on site.”

(Table 2, Page 3 - Interim Planning Policy Position Statement)

“Appendix 1 – Net zero and carbon off-setting

...All new development should make the fullest contribution to minimising carbon dioxide emissions, through a range of design, technological, landscape and ecological measures, in accordance with the following energy hierarchy:

- i) Be lean: use less existing energy.*
- ii) Be clean: supply and use energy efficiently.*
- iii) Be green: use renewable energy.”*

Energy assessment approach

In lieu of any updated planning policy since the introduction of the latest SAP methodology (SAP10), we have prepared this energy statement in line with SAP2012 (2013 regs), whilst also considering the compliance levels required for SAP10 assessments.

In preparing the energy statement we have adopted the approach specified in Appendix 1 of The Interim Planning Policy Position Statement, also known as the London plan which requires four stages of assessment to be considered:

“Baseline”- this is the energy use and carbon emissions generated from the notional building (TER) as calculated by ADL1A 2013 and SAP 2012.

“Be Lean”- this is the carbon reduction compared to the baseline as a result of improving the fabric and services in the dwelling.

“Be Clean”- further reductions from *“Be Lean”* are demonstrated by using community/district heating networks. This can be achieved by connecting to an existing network or installing a new network. There is no minimum level of reduction over the *“Be Lean”* stage required.

“Be Green”- further reductions from *“Be Clean”* are achieved by using low carbon and/or renewable technologies.

The proposed dwelling

It is the intention of the developer to build the dwelling in line with the requirements of the latest building regulations.

All fabric and controlled services will be in line with Approved Document Part L1A 2010 (2013 edition) or later.

In line with ADL1A 2010 and current local authorities adopted planning policies- The dwelling has been assessed using the Government's Standard Assessment Procedure SAP2012.

SAP 2012 requires a fabric first approach, and each dwelling must achieve a pass for dwelling fabric energy efficiency (DFEE) v target fabric energy efficiency (TFEE), as well as meeting the dwelling emission rate (DER) v target emissions rate (TER) for CO₂.

The dwelling will therefore be built to high standards of insulation and incorporate high efficiency glazing products. All controlled services will follow the guidelines for the building services and where possible better the minimum efficiency requirements.

The following energy efficiency measures will be implemented to reduce the overall energy consumption and CO₂ emissions of the dwelling before renewable or low carbon technologies are installed:

- Building control systems
- Appliances and equipment
- Design detailing
- Fabric insulation
- Heating system controls
- Lighting
- Windows and doors

The following specification has been used in the design stage SAP calculations:

U-Values

Cavity/Dormer Walls	= 0.18 w/m ² k
Wall to Roof Voids	= 0.12 w/m ² k (shelter applied)
Ground floor	= 0.11 w/m ² k
Semi-Exposed Floor to Garage	= 0.18 w/m ² k (shelter applied)
Roofs	= 0.16 w/m ² k
Ceiling to Roof Voids	= 0.12 w/m ² k (shelter applied)
Windows	= 1.20 w/m ² k Low e- soft coat 0.05, g factor 0.45
Roof Light	= 1.20 w/m ² k Low e- soft coat 0.05, g factor 0.40
Front door (Solid)	= 1.00 w/m ² k

The above design U-Values are in line with the latest ADL1A 2010 (2021 edition) of the building regulations.

Thermal bridging

All thermal bridging has been calculated for the various junctions.

Thermal Mass Parameter

Thermal mass has been calculated for all constructions.

Services

- Heating = Air Source Heat Pump – Based on Vaillant aroTHERM plus 12kW + AI
- Hot water = via ASHP to 300 litre hot water cylinder with Thermostat, Independent Time Control and Cylinder Thermostat. Cylinder standing loss = 2.32Kwh/day. All primary pipe work insulated.
- Controls = Time and Temperature Zone Control to underfloor heating.
- Secondary heating = None allowed for.
- Ventilation = Decentralised MEV to kitchen and all wet rooms Based on Greenwood Unity CV2.1
- Air tightness = An air tightness of 4.00 has been used in the SAP calculations.
- No of LEL's = 100% low energy with minimum of 80 lumens per circuit watt.

Energy Assessment Summary

The heating system has been based on an electric air source heat pump (ASHP), this being a low carbon technology and offers a very energy efficient method of heating and hot water production. As Designed stage SAP 2012 and SAP10 calculations have been provided for the dwelling. All figures quoted below have been extracted from the calculations. Analysing the results in line with the London Plan.

1. “Baseline”

Total floor area m ²	Assessment	Total Notional Dwelling CO2 Emissions per year	“Baseline” (TER) Target Emission Rate kgCO ₂ /yr/m ²
553.14	SAP2012	10,480.00	19.54
	SAP10	3,150.00	7.21

2. “Be Lean”

Assessment	Dwelling Fabric Energy Efficiency kWh/m ² /yr (DFEE)	Target Fabric Energy Efficiency kWh/m ² /yr (TFEE)	“Be Lean” % Reduction
SAP2012	45.95	57.42	24.96%
SAP10	41.20	41.41	0.51%

3. “Be Clean”

The location of the development makes the option of connecting to a community/district heating network unviable.

4. “Be Green”

Assessment	“Baseline” Target Emission Rate (TER) kgCO ₂ /yr/m ²	Dwelling Emission Rate (DER) kgCO ₂ /yr/m ²	“Be Green” % Reduction using Low-Carbon/Renewable Technologies
SAP2012	19.54	10.48	46.37%
SAP10	7.21	3.15	56.31%

Total on site savings

Total floor area m ²	Assessment	Total Dwelling Emissions (DER x m ²) Per year	Total Target Emissions (TER x m ²) Per year	% Reduction
553.14	SAP2012	5,796.91	10,808.36	46.37%
	SAP10	1,742.39	3,988.14	56.31%
SAP10 Carbon Emissions over SAP2012 baseline				63.10%

Results

The proposed design is in line with Hertsmere Borough Council’s adopted Planning Policies.

- **SAP2012**
Be Lean - The Fabric Energy Efficiency (DFEE) is **24.96%** better than the Baseline (TFEE).
Be Green - The Predicted Dwelling Emissions (DER) for the development are **45.87%** lower than the Baseline (TER).
- **SAP10**
Be Lean - The Fabric Energy Efficiency (DFEE) is **0.51%** better than the Baseline (TFEE).
Be Green - The Predicted Dwelling Emissions (DER) for the development are **56.31%** lower than the Baseline (TER).

Carbon offset payment

Any carbon offset payment will need to be calculated on current guidance as published by the Government and the District Council.

Please note predicted emissions will be lower when assessed under SAP10 due to the improved Fuel Factor for electricity and the changes in calculating the carbon emissions for the dwellings.

This may result in a lower carbon offset payment dependent on the planning policy.

Yours sincerely

Lorraine Clark

Lorraine Clark
Building Energy Assessor

References

This report was developed with data from the following drawings;

A23-034-PL001 Rev A

A23-034-PL002 Rev A

The SAP 2012 assessments have been carried out using Elmhurst Energy Systems Ltd - Design SAP2012 version 4.14r19.

The SAP10 assessments have been carried out using Elmhurst Energy Systems Ltd - Design SAP10 version 1.7.48.